

WATER **QUALITY REPORT**

2013 DRINKING WATER QUALITY REPORT



CITY OF MIDLAND, TEXAS
UTILITIES DEPARTMENT



EN ESPAÑOL

*Este reporte incluye información importante sobre el agua potable. Si tiene preguntas o discusiones sobre este reporte in español, favor de llamar al tel. **432-685-7100** para hablar con una persona bilingue en español.*

DEAR WATER CUSTOMER,

Thank you for taking the time to read the 2013 Water Quality Report for the City of Midland's public water supply.

Midland remains one of the fastest-growing cities in the nation with an estimated population of 123,933. As a native Midlander, I am excited to see us grow closer to becoming a world-class city with endless opportunities. But the future will only be bright, and our economic fortunes will only continue, if we prepare for it.

Last year, Midland completed the 70-mile T-Bar pipeline in the midst of the ongoing drought to bring groundwater to Midland for the next 40 years. We are also working on the Clear Water Ranch project, which will soon tie into existing infrastructure to bring even more water to our city.

We have also formed the West Texas Water Partnership with the cities of Abilene and San Angelo to address our long-term water needs. As partners in this joint endeavor, our communities will explore ways to maximize local water supplies, support conservation, and develop new water sources to serve the needs of residents, businesses and industries in our region for the next 100 years. Visit www.westtexaswaterpartnership.com for more information.

Our City continues to search for ways to better utilize our existing water supply infrastructure, evaluate the impacts of water management on our quality of life, and work with state water planners to ensure our region receives the maximum benefits of any ongoing state programs.

The City of Midland's Utilities Department works around the clock to ensure quality service to you, our customer. I urge you to help us by continuing to make water conservation an important part of your daily life.

Sincerely,



Midland Mayor Jerry F. Morales



PUBLIC PARTICIPATION OPPORTUNITIES

The Midland City Council meets on the 2nd and 4th Tuesdays of each month at City Hall, 300 N. Loraine Street, at 10:00 a.m. The Council agenda is posted for public notice at least 72 hours prior to the meetings. To find out whether water issues will be considered at a particular City Council meeting, please call the Utilities Department at 432-685-7260.

OUR WATER SOURCES

Midland's drinking water comes from the Ogallala and Edwards-Trinity Plateau aquifers in Martin and Andrews Counties and from surface water sources owned and operated by the Colorado River Municipal Water District (CRMWD); lakes J.B. Thomas, O.H. Ivie, Moss Creek and E.V. Spence.

T-BAR RANCH AND CLEAR WATER RANCH PIPELINES

The T-Bar Ranch water pipeline is the City of Midland's largest and most ambitious public works project to date. The \$200 million water pipeline spans more than 70 miles from 44 groundwater production wells located in Winkler and Loving Counties eastward to Midland. The project, which also includes high service pumping, 2-million- and 5-million-gallon storage tanks, chlorination facilities and terminal control facilities, reached substantial completion within roughly one year of construction, and came online in 2013. The pipeline, which was constructed through the City's partnership with the Midland County Fresh Water Supply District No. 1, has the capacity to bring more than 20 million gallons per day to the City of Midland.



Former mayors Ed Magruder (left) and Wes Perry (second from right) join Jay Edwards (top) and Jose Cuevas (right) with the Midland County Fresh Water Supply District No. 1 in sampling drinking water during the T-Bar Ranch ribbon cutting ceremony.

The 20,000-acre piece of land where the T-Bar Ranch sits was acquired by City officials in 1965. During the right-of-way acquisition process for the T-Bar Ranch project, it was discovered that City leaders could also acquire the nearby Clear Water Ranch property, which sat on top of even more freshwater. Midland is expected to gain roughly 40 years of water security once the Clear Water Ranch pipeline is tied into the existing infrastructure to bring even more water to Midland. The Clear Water Ranch project, which will cost approximately \$30 million total, is expected to be complete by the end of this year.

WHY DO WE TEMPORARILY CHANGE OUR DISINFECTANT PROCESS EACH YEAR TO PERFORM A "CHLORINE FLUSH?"

In order to comply with regulatory requirements in the treatment of surface water for potable use, the City of Midland routinely uses a disinfection method which reduces the formation of disinfection by-products that are deemed harmful if consumed over long periods of time. Though this disinfection method is a best-practice solution for an often very difficult treatment issue, over time it sets up conditions in the water distribution system which may actually lower effective disinfection levels, necessary to prevent possible harmful bacterial growth, remain in regulatory compliance, and more importantly, protects public health. In order to combat this occurrence it is often necessary and accepted practice under these conditions, to change the type of disinfection for a 30-day period annually to what is generally referred to as a "free-chlorine flush". During this period of time customers may notice that the water has a "bleach-like" odor. The water is perfectly safe for all potable use. Citizens may notice an increase in the flushing of fire hydrants. This is a very necessary part of the process to strategically distribute the chlorinated water to all parts of the system, especially those that typically have low usage. Citizens are encouraged to contact the City with any questions or concerns during this time.



CONSERVATION TIPS TO SAVE WATER AND MONEY:

- Take showers instead of baths. If you must take a bath, plug the tub before turning the water on and then adjust the temperature as the tub fills up.
- Fix your leaky faucets as soon as they are discovered. It is simple and inexpensive.
- Install a rain shut-off device on your automatic sprinklers to eliminate unnecessary watering.
- When watering your lawn, do not allow your water to run off property to a sidewalk, street, or alley.
- Test toilets for leaks. Add a few drops of food coloring or a dye tablet to the water in the tank, but do not flush the toilet. Watch to see if the coloring appears in the bowl with a few minutes. If it does, the toilet has a silent leak that needs to be repaired.
- When brushing teeth, turn the water off until it is time to rinse.
- Use a pan of water (or place a stopper in the sink) for washing and rinsing pots, pans, dishes and cooking implements rather than turning on the water faucet each time a rinse is needed.
- Check water requirements of various models and brands when considering purchasing any new appliances. Some use less water than others.



DID YOU KNOW?

Due to the ongoing drought throughout Texas and water supply shortages, the City of Midland implemented strong water conservation measures by restricting outdoor water usage and raising rates on higher tiers of usage in 2012. The measures reduced the consumption of City-supplied water by 35% between FY 2011 and FY 2012, and the City of Midland continued to see historically low levels of consumption in 2013.

EDUCATIONAL AND INFORMATIVE WEBSITES:

WaterSense:

www.epa.gov/watersense

Helps consumers make smart water choices that save money and maintain high environmental standards

U.S. Geological Survey:

water.usgs.gov/watuse

National water use information and data

Keep Midland Beautiful:

www.keeptmidlandbeautiful.org

Local conservation tips and events

EPA – Drinking Water Activities for Kids:

water.epa.gov/learn/kids/drinkingwater

Interactive games and activity sheets for children by grade

Permian Basin Master Gardeners:

www.westtexasgardening.org

Local landscaping tips and workshops

Water – Use it Wisely:

www.wateruseitwisely.com

Arizona-based campaign with wealth of tips about how to save water





The following information is not meant to alarm or scare you. It is meant to make you aware.
The exact wording shown below is required by state regulations.

WATER QUALITY REPORT



This report is intended to provide you with important information about your drinking water and the efforts made by the water system to provide safe drinking water.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at 800-426-4791.

For more information regarding this report, contact Holly McGrath Rosas, Interim Director of Utilities, at 432-685-7260.

A Source Water Susceptibility Assessment for your drinking water source(s) is currently being updated by the Texas Commission on Environmental Quality. This information describes the susceptibility and types of constituents that may come into contact with your drinking water source based on human activities and natural conditions. The

information contained in the assessment allows us to focus source water protection strategies. For more information about your sources of water, please refer to the Source Water Assessment Viewer available at the following URL: <http://www.tceq.texas.gov/gis/swaview>. Further details about sources and source water assessments are available in Drinking Water Watch at the following URL: <http://dww.tceq.texas.gov/DWW>.

SPECIAL NOTE

Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. We cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

SOURCE OF DRINKING WATER

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals, and in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminates that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.
- Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

DEFINITIONS AND ABBREVIATIONS

Maximum Contaminant Level (MCL)

The highest permissible level of a contaminant in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal (MCLG)

The level of a contaminant in drinking water below which there is no known or expected health risk. MCLGs allow for a margin of safety.

Maximum Residual Disinfectant Level (MRDL)

The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG)

The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contamination.

Treatment Technique (TT)

A required process intended to reduce the level of a contaminant in drinking water.

Action Level (AL)

The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

- Avg** – Regulatory compliance with some MCLs are based on running annual average of Monthly samples
- NTU** – Nephelometric Turbidity Units
- MFL** – million fibers per liter (a measure of asbestos)
- pCi/L** – picocuries per liter (a measure of radioactivity)
- ppm** – parts per million, milligrams per liter (mg/l), or one ounce in 7,350 gallons of water
- ppb** – parts per billion, micrograms per liter (µg/l), or one ounce in 7,350,000 gallons of water
- ppt** – parts per trillion, nanograms per liter, or one ounce in 7,350,000,000 gallons of water
- na** – not applicable

ARSENIC

The maximum contaminant level (MCL) for arsenic decreased from 0.05 mg/l (50ppb) to 0.010 mg/l (10ppb) effective January 23, 2006. If we violate, you will be notified. Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.

SECONDARY CONSTITUENTS

ABOUT THE FOLLOWING PAGES

The pages that follow list all of the federally regulated or monitored contaminants which have been found in your drinking water. The U.S. EPA requires water systems to test for up to 97 contaminants. For a complete list of all contaminants tested and the analytical results, go to: <http://dww.tceq.texas.gov/DWW/>

The City of Midland has two designated entry points into our water system the first is EP001; this is located at the water plant as it enters into the distribution system; EP003 is located on the Paul Davis line before it is blended at the water plant. The violations in association with EP003 are isolated to 5 residences in Martin County; these residence receive Paul Davis water before it is blended at the Water Purification Plant.

REPORT DATA: INORGANIC CONTAMINANTS

Collection Date	Contaminant	Highest Level Detected	Range of Levels Detected	MCL	MCLG	Unit of Measure	Violation
2013	Arsenic*	9.02 EP001 31.0 EP003	5.57-9.02 22.9-31.0	10	0	ppb	N Y
2013	Barium*	0.151	0.0247-0.151	2	2	ppm	N
2013	Fluoride*	1.46 EP001 4.45 EP003	1.41-1.46 4.26-4.45	4.0	4	ppm	N Y
2013	Nitrate*	2.0	0.75-2.14	10	10	ppm	N
2013	Selenium*	23.6 EP001 70.1 EP003	16.0-23.6 47.0-70.1	50	50	ppb	N Y

SOURCE OF CONTAMINANT:

ARSENIC*

Erosion of natural deposits; Runoff from orchards; runoff from glass and electronics production wastes.

BARIUM*

Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.

FLOURIDE*

Erosion of natural deposits; Runoff from orchards; runoff from glass and electronics production wastes.

NITRATE* (measured as Nitrogen)

Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits. *Nitrate Advisory - Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health care provider*

SELENIUM*

Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines.

REPORT DATA: RADIOACTIVE CONTAMINANTS

Year	Contaminant	Highest Level Detected	Range of Levels Detected	MCL	MCLG	Unit of Measure	Violation
1/26/2011	Beta/photon emmitters*	11	11 - 11	50	0	pCi/L	N
1/26/2011	Gross alpha excluding radon and uranium*	2.3	2.3 - 2.3	15	0	pCi/L	N

SOURCE OF CONTAMINANT:

GROSS ALPHA EXCLUDING RADON AND URANIUM*

Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.

BETA/PHOTON EMMITERS*

Decay of natural and man-made deposits.

REPORT DATA: VOLATILE ORGANIC COMPOUNDS

No regulated contaminants were found above detection limits

DISINFECTION BYPRODUCTS

Year	Contaminant	Highest Level Detected	Range of Levels Detected	MCL	MCLG	Unit of Measure	Violation
2013	Haloacetic Acids (HAA5)*	27	11.7	No goal for the total	60	ppb	N
2013	Total Trihalomethanes (TTHM)*	107	47.6-107	No goal for the total	80	ppb	Y

SOURCE OF CONTAMINANT:

HALOACETIC ACIDS (HAA5)*

By-product of drinking water chlorination. *Not all sample results may have been used for calculating the Highest Level Detected because some results may be part of an evaluation to determine where compliance sampling should occur in the future.*

TRIHALOMETHANES (TTHM)*

By-product of drinking water chlorination. *Not all sample results may have been used for calculating the Highest Level Detected because some results may be part of an evaluation to determine where compliance sampling should occur in the future.*

LEAD & COPPER

Year	Contaminant	MCLG	Action Level (AL)	90th Percentile	# Sites over AL	Unit of Measure	Violation
2013	Copper	0.00591 ppm	1.3	0.342	0	ppm	N
2013	Lead	0.001ppm	15	0.00432	0	ppm	N

LIKELY SOURCE OF CONTAMINANT:

COPPER*

Corrosion of household plumbing systems; Leaching from wood preservatives; Erosion of natural deposits

LEAD*

Corrosion of household plumbing systems; Erosion of natural deposits;

COLIFORM BACTERIA

Maximum Contaminant Level Goal	Total Coliform Maximum Contaminant Level	Highest no. of Positive	Fecal Coliform or E. Coli Maximum Contaminant Level	Total No. of Positive E. Coli or Fecal Coliform Samples	Violation
0	5% of monthly samples are positive.	0.7% of samples were positive Sept 2013	A routine sample and a repeat sample are total coliform positive, and one is also fecal coliform or E. coli positive.	0	N

LIKELY SOURCE OF CONTAMINANT:

Naturally present in the environment

REPORT DATA: TURBIDITY

	Limit (Treatment Technique)	Level Detected	Violation
Highest single measurement	2013 1 NTU	0.32 NTU	N
Lowest monthly % meeting limit	2013 0.3 NTU	97.16%	N

LIKELY SOURCE OF CONTAMINANT:

Soil Runoff

REPORT DATA: RESIDUAL DISINFECTANT LEVEL

Year	Disinfectant	Average level	Minimum Level	Maximum Level	MRDL	MRDLG	Unit of Measure
2013	Chloramines	1.48	0.00	7.80	4.0	<4.0	ppm

SOURCE OF CHEMICAL:

Disinfectant used to control microbes.

VIOLATIONS

Violation Type	Health Effects	Duration	Explanation
ENTRY POINT 003: MCL VIOLATION-FLUORIDE	Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Children may get mottled teeth.	Quarters 1,2,3&4 2013	The Paul Davis well field has elevated fluoride levels. This source is currently no more than 25% of the City supply. These readings were taken of raw well water at the well field. Residents of town do not get this water but the blend which meets regulatory standards.
ENTRY POINT 003: MCL VIOLATION-ARSENIC	Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.	Quarters 1,2,3&4 2013	
ENTRY POINT 003: MCL VIOLATION-SELENIUM	Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation.	Quarters 1,2,3&4 2013	

STEPS TO CORRECT:

The City has redesigned the entry points to our system to ensure that the water from the Paul Davis well field is blended with treated surface water to ensure the levels of fluoride are always below regulatory limits. We have successfully completed a pilot study to install point of use devices on the 5 isolated customers who only receive this water to eliminate this violation. The City is awaiting approval from the regulatory agencies to implement.

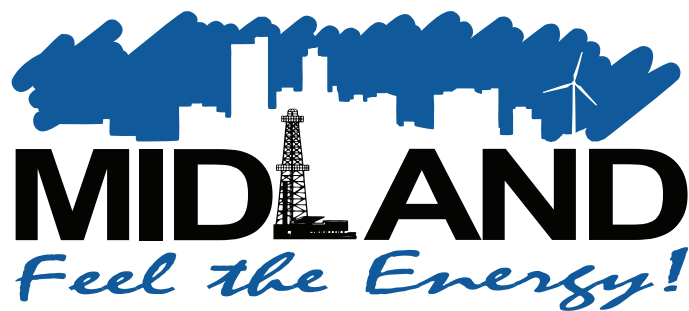
Violation Type	Health Effects	Duration	Explanation
ENTRY POINT 001: MCL VIOLATION TOTAL TRIHALOMETHANES (TTHM)	Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems and may have an increased risk of getting cancer.	Quarters 1&2 2013	Trihalomethanes are a group of volatile organic compounds that are formed when chlorine, added to the water during the treatment process for disinfection, reacts with naturally-occurring organic matter in the water. The levels have increased in the water distribution system with increasing water detention times due to drought driven lower demands.

STEPS TO CORRECT: The City is in the process of reviewing its overall disinfection practices to address these and other disinfection concerns.

SURFACE WATER TREATMENT TECHNIQUE VIOLATION (Distribution System Disinfection Residual)	Some people who drink inadequately treated water (lacking disinfectant) may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.	June/July 2013 July/August 2013 October/ November 2013 November/December 2013	Due to the drought and lack of movement in the system, the water in the distribution system fell below the required monthly average for disinfection. The City takes 120 chlorine samples a month throughout the distribution system. Only 6 of those 120 samples are allowed to be below 0.5 mg/L requirement. Any more than that will put the system below the 95% system average requirement.
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STEPS TO CORRECT: The City is continuing to perform routine maintenance on the distribution system and flushing the lines to improve the disinfectant residuals.

PRESORTED
STANDARD
US POSTAGE
PAID
MIDLAND, TX 79711
Permit #10



OUR DRINKING WATER IS REGULATED

by the Texas Commission on Environmental Quality (TCEQ) and they have determined that certain water quality issues exist which prevent our water from meeting all of the requirements as stated in the Federal Drinking Water Standards. Each issue is listed in this report as a violation and we are working closely with the TCEQ to achieve solutions.

CURRENT OUTDOOR WATERING SCHEDULE

*Even numbered addresses may water outdoors on Saturdays and Wednesdays from 6 p.m. until midnight.
Odd numbered addresses may water outdoors on Fridays and Tuesdays from 6 p.m. until midnight.*

Are you thinking of establishing new landscaping or do you believe you require a variance from a drought restriction? Water Use Variance Request forms are available at www.midlandtexas.gov/DocumentCenter or at the City's Code Administration office on the 4th floor of City Hall (300 N. Loraine).

FOR MORE INFO GO TO: WWW.MIDLANDTEXAS.GOV